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FEASIBILITY STUDY

Beaufort County, SR 1501
From SR 1306 to SR 1507
FS 890021

Prepared by
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2/27/90
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F. S. 890021

I. GENERAL DESCRIPTION

This report covers a preliminary study of possible improvements to SR 1501 from SR 1306 to 0.3 mile east of SR 1507 as shown on the attached map. The total length of the project is approximately 1.6 miles.

The request for this feasibility study came from Board of Transportation Member Mr. Randy Doub. Mr. Doub indicated there were local concerns regarding increasing traffic hazards along SR 1500 due to considerable development growth and the opening of the new Washington High School in the near future.

II. PURPOSE OF PROJECT

Existing Route Characteristics

SR 1501 (Highland Dr.) is designated as a major thoroughfare on the Washington Thoroughfare Plan. Also, it is classified as an urban minor arterial in the the North Carolina Functional Classification System within the study limits.

The existing cross section on Highland Drive is basically a 22-foot paved roadway with 6-foot grass shoulders on variable 40-50 feet of right-of-way. The exceptions are a short segment of 48-foot curb and gutter section at the beginning of the project which tapers to 22 feet approximately 200 feet east of SR 1306, and the western approach to Slate Stone Drive (SR 1507) which was recently widened to provide a separate left-turn lane. The speed limits on Highland Drive are 35 mph from the beginning of the project to Avon Road and 45 mph for the remainder of the project.

Roadside development is light to medium density residential and institutional development. Beaufort County Hospital is located at the beginning of the project. Other development along the project length includes two nursing homes (Beaufort County and Ridgewood Manor), the Beaufort-Hyde-Martin Regional Library, a mental health center, two churches, and Cedar Hill Cemetery. Residential development makes up the rest of the land use along the project.

The City of Washington is constructing a new senior high school on Slate Stone Drive just north of its intersection with Highland Drive. This school will have over 1200 students and is scheduled to open in the fall of 1990.

There is one bridge along the project. The concrete bridge spans Runyon Creek and is 42 feet long with a clear deck width of 30 feet. This bridge was built in 1987 and has a sufficiency rating of 80.6 out of a possible 100 points.

Traffic Volumes, Capacity, and Accident Record

The estimated 1990 traffic volume along Highland Drive is 6800 vehicles per day (vpd). This volume is expected to increase to 10,100 vpd by the year 2010 mainly due to the influence of the new Washington High School and the anticipated increase in residential and commercial growth in the area.

Traffic volumes along Highland Drive are approaching capacity. Before the design year is reached (2010), the facility will be over capacity, resulting in an increase in congestion and a decrease in safety of the route.

During the period from January 1, 1986 through July 1, 1989, a total of 61 accidents was reported along the studied portion of SR 1501. This resulted in an accident rate of 776.35 accidents per 100 million vehicle miles (Acc/100 MVM), compared to a statewide average of 378.4 Acc/100 MVM for all urban secondary routes over the same period. There were no fatalities reported during the period, but 32 of the accidents resulted in injuries. The most prevalent accident types were running off the road, rear end collisions, and left-turn accidents. The wider cross section and center left-turn lane proposed in this report should reduce the potential for these types of accident.

Need for Project

The existing two-lane width along Highland Drive will not be sufficient to handle the increasing traffic demand. After the new Washington High School opens, an additional demand will be put on Highland Drive. In order to handle the increasing traffic, widening of Highland Drive is recommended.

III. RECOMMENDATIONS AND COSTS

The recommended ultimate cross section is a 5-lane curb and gutter section on a minimum 80-foot right-of-way. In order to reduce the initial cost of the project, it is recommended the project be stage constructed with a three-lane shoulder section being built initially. However, right-of-way should be purchased initially to accommodate the ultimate 5-lane section. Additional right-of-way will be required to allow any widening of the existing road.

The 3-lane shoulder section would consist of three 12-foot lanes with 8-foot shoulders including two-foot paved. The center lane would be used for left turns throughout the project length. It is recommended the facility be widened generally symmetrical about the centerline with alignment shifts being made as needed to reduce the impact on the adjacent development.

Widening of the existing bridge to maintain three-lane continuity is not needed. The recommended adjoining sections can be safely transitioned into the existing two-lane bridge width. There is no development or cross street at or near the bridge to merit provision of a left turn lane across the bridge.

The estimated costs of the three-lane improvement are as follows:

Construction	$1,400,000
Right-of-Way	830,000
TOTAL:	$2,230,000

The construction cost includes engineering and contingencies, and the right-of-way cost includes relocation, acquisition, and utility costs.

IV. ALTERNATIVES CONSIDERED

Since the proposed project involves the widening of an existing highway, no alternative alignments were considered.

A four-lane curbed cross section was considered for the improvement to SR 1501. The four-lane alternative would cost less than the recommended ultimate five-lane cross section, but the interference of existing driveways and side streets and the turning traffic which they generate would create a capacity deficiency on this section before the end of the planning period. Without the center turn lane, the roadway would not only have a capacity deficiency, but would have a higher accident potential due to the high number of turns. Drivers are accustomed to using the left lane of a highway as a high speed through lane and are not expecting vehicles to be stopped or turning from this lane. The four-lane cross section would not appreciably lessen the accident potential for rear-end and angle collisions over the present roadway, and these have been the predominant types of accidents on this highway in the past. Due to the inadequate capacity, the difficulty of turning into adjacent development, and the higher accident potential, a four-lane cross section is not recommended.

The construction of a five-lane curb and gutter facility initially was also considered. This alternative was not considered to be an urgent need at this time due to the higher initial cost and the ability of the three-lane section to handle the projected traffic volumes through much of the planning period. The five-lane curb and gutter cross section has an estimated construction cost of $2,600,000, which is approximately $1,200,000 more than the cost of the three-lane improvement.

V. ENVIRONMENTAL EFFECTS

The implementation of the proposed project is not expected to result in any significant impact on the environment. The construction of the project will require the relocation of an estimated one residence and ten graves. The project will also result in increase noise levels for remaining development adjacent to the roadway. Other impacts will be primarily related to the actual construction of project and will cease upon completion of the project. These include minor erosion and siltation, increased noise levels from construction machinery, and delay and inconvenience to motorists using Highland Drive.

VI. FUTURE ACTIVITIES

If the project is to be implemented at a future date, all feasible alternatives and their associated impacts will need to be evaluated in a planning/environmental document prior to that time, and a final decision made as to the most appropriate improvement.

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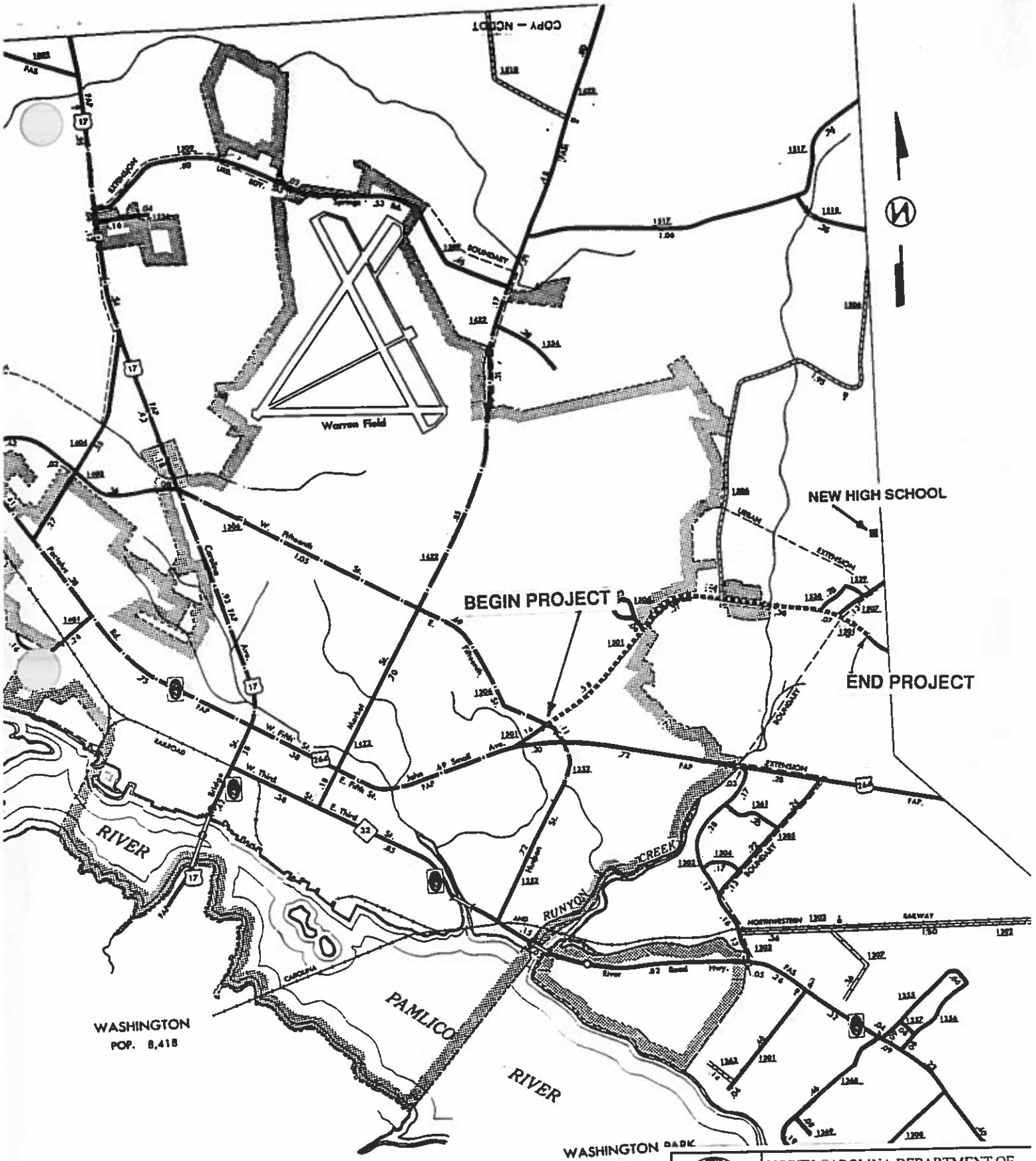

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND RESEARCH BRANCH

SR 1501
FROM SR 1306 TO SR 1507, BEAUFORT CO.
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